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HOME ECONOMICS IN A GIRLS' COMMERCIAL HIGH SCHOOL[1]

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Every American educational institution is pledged first of all to develop the ideals of democracy and to educate both girls and boys for the duties of citizenship. Not only universities and colleges but even high schools feel the necessity for providing each generation with some means of coming into at least a fraction of its rightful inheritance of the world's treasures in literature and art as well as of understanding something of its modern scientific achievement. When a high school, in addition to these common aims, lays special stress on: (1) preparing pupils for entering helpfully into the commercial life of the community, by giving them the necessary fundamental training and an intelligent comprehension of the commercial opportunities offered in their city; (2) establishing a vital relation with the business community so that the school shall be, not only an avenue leading into commercial life, but a source of supply to the business system of the community, a recognized point of contact between the educational system and business life; and (3) keeping so closely in touch with business forms and methods that each new change shall promptly be adopted into the commercial training,—then such a school is rightly differentiated as a commercial high school, however relatively broad or narrow the scope of its training and service to the community.

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A girls' commercial high school must do even more; it must keep in mind that its graduates may leave business at any time (according to statistics at the end of the sixth or eighth year) to become homemakers and mothers. What is more upon the conscience of the educator than the training of these girls, who are actually a factor in business life, who become citizens, founders of homes, spenders of the family income, and who bear and rear children, to the profit or loss of the next generation? Personally, I think it equally important that boys, who eventually become householders, earners of the family income, and fathers of families, should be prepared for their responsibilities. In fact, I should like to sketch a course in home economics for boys, but, as that is not my present problem, I shall confine myself to the home economics courses for girls to which we are all so thoroughly converted that every commercial high school I know anything about (except my own) offers special homemaking subjects, as electives.

I have indicated all that a girls' commercial high school should accomplish in theory, now what are the facts? First, while such a school is differentiated as a commercial school, its commercial range does not yet include much beyond stenography, typewriting, and bookkeeping; and, when these subjects are not found in the first year, hundreds of girls go to the shorter courses of the private business schools. The parents of boys are convinced of the value of a four years' commercial course, and the boys themselves are held by the broader interpretation of the commercial curriculum to include, not merely stenography, typewriting, and bookkeeping, but all the occupations concerned with the exchange of commodities, such as transportation, banking, advertising, insurance, and business management. The same parents are not convinced of the value of such a four years' training for their daughters.

Let us examine the reasons why the girl elects the commercial high school.

Her family fears that she may some day be obliged to support herself, and it is the wise virgin who fills her lamp. If she has stenography and typewriting at her command, she will be able to maintain her place in her stratum of society. Or her family is actually dependent upon her help in supporting and educating the younger children. The commercial course is a direct route to a "nice respectable office job." Or the family income, though sufficient to send her to high school, is static. She sees no way to reach the larger social life she begins to crave—the smart clothes, the activities that demand many "extras"—except by

earning them herself at the end of her high school course. The family has come to look upon her ability to do so as her dowry, or "dot."

I have not mentioned the girl who chooses the commercial high school because she is ambitious to be a real business woman, to be an employer, to risk her own capital, and to take her place among competitive firms. I am under no illusions about the business woman. There are thousands of women in business, but, as yet, only an infinitesimal number of business women.

If you examine the three reasons that I have given for the choice of the commercial high school, you will discover the same attitude in all three—home the ruling interest, business a transient means. "Ah," you say, "if these are the facts, how fortunate that we have home economics for her in the commercial course." But alas! She finds only repetition of her elementary subjects. It is my conviction that cooking and sewing, *per se*, belong in the elementary school. Advanced courses in cooking and sewing, dressmaking and millinery, belong in the vocational high school, which trains dietitians and makes dressmakers and milliners for the trade.

The high school girl is usually a factor in the home kitchen. She has no opportunity to lose the knowledge and experience that she has gained in her elementary school training, and she is intelligent enough to follow suggestions made in high school courses, report on her results, and go on building on her elementary knowledge. In her general science course she learns as much about food values as the ordinary housekeeper needs to know; in her hygiene course she gets, not only personal hygiene, but the hygiene of the home; in home nursing she learns many other phases of home economics. It is a joy to me to hear in a class in community civics that there are twenty-four milk stations in Brooklyn, and that a doctor and a nurse are in attendance to weigh babies that the mothers in the neighborhood take there for examination and advice; to hear the family budget discussed in relation to food, clothing, recreation, and kindred topics; and to see the enthusiasm that centers around the home. And these courses are not elective.

While conditions differ in various parts of the country and are shifting yearly, I have questioned more than two thousand girls in New York City commercial high schools, and of the two thousand, all of whom learned to sew in the elementary schools, only sixty-three actually do sew. "Nobody in our family has time to sew," they tell me. Their sisters go to business; their mothers are too busy. "It is more

satisfactory to buy things ready made." And so it is, whether one lives in the center of the garment industry, or buys from a mail-order house by parcel post. Just as the making of quilts, comfortables, and curtains has been taken out of the home to the factories, so now sheets, pillowcases, and towels are not even hemmed at home. There are specialty shops with merchandise only for infants, others only for juniors, still others for misses; this high degree of specialized merchandising standardizes styles and reduces costs. Women's garments are divided into house dresses, afternoon dresses, evening gowns, negliges, sport suits, and so forth, and any one must see in this constant advance the passing of the homemade garment. Over a hundred of my two thousand claimed to make underclothes, but "not everyday ones, just fancy ones."

In facing the facts, we must acknowledge that our homemaking courses do not hold the girls in school; and that they are entirely extraneous to the commercial work and are only of mild interest to the girl who gets enough practical domestic science at home and knows that she will always buy her clothes ready-made.

What then do I suggest that will better function in our commercial course? I should, for the present at least (nothing can be permanently adjusted), recast the course into the economics of buying. The study of general economics forms a part of the regular course, and a very definite course in merchandising for herself, her dependents, her home, could be easily dovetailed. She needs to know more about buying everything, beginning with food, and more about the food market, cold storage problems, and the like. She buys furniture scarcely knowing one wood from another, and knowing nothing of joinery, finish, varnish, or of period styles and their appropriateness to her home environment. She buys carpets and rugs blindfolded by ignorance of all color harmony, pattern value, and wearing quality; she never does "remember" whether she has bought a Wilton, an Axminster, a Brussels, or something else. She may be "keeping up with the Joneses," but that is her only standard. This same person buys lamps, china, silver, sofa cushions, curtains, and chooses wall paper, yes, even pictures to hang on the walls and grow into the lives of the children. What has she been taught about buying such things? Does she even understand true economy in kitchen utensils?

The majority of our high school girls know the fashionable woolen textiles used for women's suits, such as serge, tricotine, duvetyn, and

the like, but beyond that textiles mean little to them. I have sold textile merchandise, and I know that the ordinary good customer cares little for anything but the style of the garment and the price. Because she has no standard of judgment, she can make no demand on the manufacturer; she is the easy mark of the designer and will wear the style in the price she is able to meet. Whose fault is it that she is betrayed into the caricature we commonly behold? Has her aesthetic taste been awakened, her sense of line and proportion been developed? Was she ever called upon to explain or defend the color of her sweater and the color of her hat? Does she know anything about color? Why do we leave her to become the victim of the lawlessness of fashion? You will appreciate that I am not urging just a course in textiles; not simply a study of silk and linen, cotton and woolen; not even a study of woods, metals, glass, and porcelain. What I am urging is a study of these in the form of merchandise for the home, controlled by the family budget, by the state market, by the canons of good taste.

I have not dressed these suggestions in the popular terms of the "project problem," but I assure you that they can not be taught in any other way. Instead of the customary kitchen laboratory and sewing rooms, there should be a suite of rooms bearing the same relation to the home that the office practice room bears to the business office. They should be furnished by each class, in illustration of the principles I have mentioned. Such rooms used for social occasions, for example club meetings, class luncheons, teas for visitors, are also a real factor in helping to develop the social graces so sadly lacking in some of our girls of high school age, but just as necessary for the general good as the economic buying for which I have been pleading. In this way, I believe, the high school girl can best be fitted for her double vocation—the office and the home.

UTILITY IN EDUCATION

An Interpretation of the Spirit of the Times

To say that education has shifted from the classical-cultural to the industrial type is to intimate that society itself has undergone a radical economic transformation. The characteristic elements of this change are outgrowths of the eighteenth century Industrial Revolution, now finding somewhat belated expression in America in the current social readjustment. Two of its outstanding features, the money economy and the machine-production economy, have made possible an almost incredible expansion of productive capacity which has slowly shifted the social center of gravity from the use of goods to their production. By far the larger part of the social resources are thus shunted toward the productive process. . . . . No corresponding elaboration of technique has occurred in the field of consumption.

Production is primarily competitive and dynamic, consumption emulative and static. The one develops, under modern conditions, a constantly improving technique, while the other changes but slowly. Production uses the social machinery freely and thus reacts directly on society; consumption pertains chiefly to the individual or small group and affects the social machinery but little. Now, the classical type of education, by which, of course, is not meant any particular set of studies but their fundamental purpose, is directed toward the promotion of appreciation and valuation, which are the basic elements of consumption. It has thus, like consumption, suffered a depression coincident with the overlordship of the productive interest. In addition it has had to bear the imputation that it is a mere luxury, that it centers on individual excellence rather than social worth, and that it breeds a culture caste inconsistent with democratic ideals. This latter indictment was never sound in logic, and in practise is true only to the extent that in an over-industrialized society the materials of culture are not socialized to the same degree as are productive agencies. A social readjustment in the interest of balancing-up the consumption technique will go far toward wiping out whatever stigma now attaches to cultural ideals. For after all culture is essentially social. Although beauty may possibly be its own excuse, no one has ever seriously contended that intellectual excellence can validate its existence except as it ministers to the unity and solidarity of the general life . . . .—*U. G. Weatherly in Educational Publicity, Scientific Monthly, February, 1919.*

OPPORTUNITIES FOR WOMEN IN THE MODERN HOTEL[1]

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In a world in which all is change and growth, no more radical change has come than in the conduct of present day hotels. They have grown and expanded beyond the dreams of the most forward looking manager of a generation ago, and today one wonders what another generation will be able to add to the present mode of management and comfort.

The metropolitan hotels with their ever increasing number of rooms and consequent increasing number of employees, together with the great amount of capital invested, make their managers true captains of industry, and hotel doors are now veritable doors of opportunity for the business woman, daily swinging wider for her admittance.

Hotels, like other industrial plants, are divided into departments, each a spoke in the wheel of organization, the hub of which is the manager. The conduct of each department calls necessarily for a high degree of system and skill in industrial management. At present scarcely a department exists that has not a woman employee, in fact some departments so logically belong to woman's field, that they are now managed by women almost entirely. So far as I know, no man has ever applied for the position of housekeeper. That field still remains open to us, and for reasons with which we are all familiar, seems to be essentially ours for some time to come.

The qualifications of a good housekeeper are manifold. She must be skilled in handling maids and housemen, must have a knowledge of linens and upholstery, carpets, rugs, hangings, and curtains. Nor is it a small task to provide for and keep track of bedding and linen for two thousand bedrooms, some with two beds to the room and with cots often added. Those who are fond of arithmetic can figure the number of sheets and pillowcases required to change these beds with four pillows for each every day, and keep some linen on the closet shelves, while other pieces are traveling back and forth to the laundry. So, too, with washable window curtains, towels, table cloths, and napkins, for the housekeeping department supplies the linen for the restaurants. The writing paper, ink, and pads which we find on our desks are supplied by

[1] Presented at the meeting of the Institution Economics Section of the American Home Economics Association, Madison, Wis., May, 1919.

this department, as well as the bathroom appurtenances, such as soap and wash cloth. This department is responsible for the keeping of the assembly and public rooms of the hotel, and for the window cleaning all over the house. If one is planning for a housekeeper's position she should add a course of interior decoration to the institutional management course, so that managers may be influenced in having the furnishings of hotels harmonious and restful.

On each guest floor there is a floor desk, where a floor clerk is on duty from seven in the morning until twelve at night, with a change of watch twice during the day. These fifty floor clerks occupy important positions. The floor records are kept by the clerks, the mail for each floor is distributed from the floor desks, telephone and telegraph messages are received by the clerks, and they come daily and hourly into close contact with the guests. They must, therefore, be of good presence, tactful, often quick in decision, and courteous at all times and under all circumstances. They are also links between the housekeeping department and the front office. Their speedy report of rooms vacated and again made ready for incoming guests tends to lessen delay in the assignment of rooms. The head of the floor clerk department is a woman, and she and her assistants also have charge of the lost and found department. Hundreds of articles left in the haste of departure, or lost during residence in the hotel, are daily returned to the guests, be the guests far or near. Such a department encourages better morale on the part of the employees. They are less tempted to keep an article found, when they know it will otherwise be returned to the rightful owner from a department organized for that purpose.

Women do the day-time bookkeeping, and the cashiers are all women. As each bill is kept up "to the minute," literally, the bookkeeper's is no easy task, while the cashier must be ever alert with the change. This department has a woman head.

The controller of the hotel is a woman and about two-thirds of the employees in her department are women. She is responsible for the women restaurant cashiers, also. At the end of each day her department furnishes an account of all food sold during that day, so that the amount can be told in detail and in most instances the percentage of profit derived. This system tends to do away with losses because errors can be rectified at once instead of at the end of the month. The cashiers and checkers must do their work quickly, and you can realize how important it is to have it done correctly when three or four thousand guests are served in a day.

A few years ago I asked our chef why he did not have more women in the kitchens and pantries. He replied, "because they can not stand the heavy work and the heat, and besides they are a nuisance when working with men, as they either fight with them or fall in love with them, both bad conditions for work." But it happened that men fell to fighting each other, and the war had not progressed very far before the kitchens began to be short on men and long on women. They came into pretty nearly every department the chef controls, and with them came the sanitary inspectress. She is a woman who approached the manager and asked that she be allowed to try out sanitary work in the kitchens. A graduate of Teachers College, she was convinced that she could supplement the work of the employees in the kitchens. And she has succeeded most wonderfully. It was a bit startling to a French chef to have a woman, robed in white uniform and cap, come up to him, take hold of the towel he wore in his belt, shake her head and say, "Tut, tut, it will not do." Then she took it away from him and the performance never had to be repeated. She loves to tell the story of the grease man whose work is to dispose of the grease and scraps. He was inclined to spatter when she first made his acquaintance and, as their language was not the same, she had some difficulty in making him understand what she wanted him to do. The pantomime was very interesting for awhile. He had learned two English words, "hell" and "job", and as they were all he knew he frequently combined them for her. She only laughed and held her electric light—which he did not at all need—to encourage him. Then one day he began to grasp what she meant. He smiled and forthwith vied with other employees in keeping his corner washed and clean. She had given him a bit of education and taught him to respect his job. One day, while trying to explain to another employee that his work would not pass muster, she turned to find the grease man standing by evidently enjoying the talk. She said, "Oh, there's the grease man; he knows how things should be," and the grease man, his face wreathed in smiles, said, "No, no, now grease clerk."

Some paces beyond the grease clerk's office, girls dress the fruit and pastry plates, and assist with the cakes. When our inspectress came, these girls were coming to work unsuitably dressed for pantry work. She had them don white aprons—large ones to cover the entire dress—and wear dainty white caps as do the men. This innovation saved laundering of waists and prevented a possible hair or hair pin from finding improper harborage. In the next pantry girls make salads,

while beyond a girl is cooking buckwheat cakes. Girls assist in the silver pantry and in sorting and packing candies, after dipping chocolates or assisting in other ways in the candy-making. So girls and women have come into the kitchens and are making good, and the chef says he is glad to have girls take charge of the pantries, as he finds women are more careful and economical of the food they handle than are men. He thinks, too, they should prepare to be chemical analysts to work in the hygienic department and asks why they can not and do not make the cakes they like so much to eat. And why indeed? Surely no better training could be obtained by the girl or woman contemplating opening a tea room, than that in a hotel kitchen.

So good has been the work of the sanitary inspectress that, when the New York Board of Health waged its drastic campaign of inspection of hotels and restaurants, it rated higher than all others the hotel in which she has found opportunity to demonstrate her worth and ability.

One November on a given day at high noon, most of the waiters and many of the cooks in the hotel went on strike. In the course of a very few days their places were filled by women, and, for the first time in the history of metropolitan hotels, waitresses took the place of waiters. The Maitre d'Hotel has stated that it takes seven years to make a good waiter, yet in seven months they were replacing quite satisfactorily the seven year men. This was due rather to woman's ingenuity in performing the task at hand than to any educational background. Their shortcomings were those incident to lack of years of training, not to a lack of the right attitude of mind toward their jobs. The fact that they are come marks a new era, and they are filling well their places in the great hotel. There is a matron, with a university training, to guide, assist, and encourage them, and also a gentlewoman who acts as banquet hostess, looking after the banquet rooms.

The officers dining hall for employees is in charge of a college woman and she has several women assistants.

The telephone department is in charge of and operated entirely by women. Three thousand messages are averaged daily, with fifty-five women to handle them.

The publicity department, in which is filed letters asking for reservations, is in charge of women. Names and addresses are recorded on the addressograph machine, and are filed away in a cabinet to become a part of a mailing list running into the thousands. These names have constantly to be checked and rechecked, and are used when notices of

special dinners, celebrations, or conventions occur. Circular letters are sent out from this department, reports of other departments are made up here, and lists are filed territorially and by state, town, name, and number. It is one of the busiest departments in the hotel. There is an opportunity here for girls clever in composing circular letters and in designing attractive cards for special entertainments.

But what of the outside world, the great New York all about this great hotel?

Come to my office and find yourself on a woman's floor and in a new department created, at the opening of this hotel, especially for women. Seventy-five rooms given over to their exclusive use and a library available for all guests, parlors and a hairdressing parlor, together with the office, make it unique and like an exclusive woman's club. "Will women want a woman's floor?" the manager asked me when I approached him several months before the hotel opened, and begged to be allowed to be the hotel's hostess and guide for the stranger within the gates. "Let us see," I replied, and so it came about that I was to establish the only woman's floor in the hotel world. I sent out three thousand letters under my own signature announcing it, and these went largely to club women, schools, and colleges. The response came at once, for, not only have club women and college girls wanted it, but others have been waiting for it. To it come women from all parts of the world, live women, distinguished women, business women agog with the world's work.

Nor do I lack touch with the woman at home, for the tall, good-looking man, waiting his turn at the office door, hands me fifty dollars and asks that he be bought the prettiest blouse to be found, for the prettiest wife in Oklahoma, and "something a girl would like." He returns at evening to find his purchases awaiting him and is assured they may be returned if not satisfactory. But no purchase for the "woman at home" has ever come back. Nor is it less delightful to help select a seal coat "to surprise mother with" or to "slip around the corner," as he puts it, to Fifth Avenue with a charming young Southerner and give my opinion as to which of two engagement rings is the handsomer.

One gets some mental shocks at times. A woman asked one day what she could see in ten days that was worth while, adding that this was her first visit to New York, and her husband, who had been there before, was most anxious to bring her in order that she might see the Pennsylvania Railroad Station and the automat restaurant. A bridegroom

confronted me with a list of things he wanted "her" to see and I was rather surprised, after directing him how to find the Metropolitan Museum, to have him ask, "And where is the nearest and largest five-and-ten-cent store. I want her to see one of them. They are curiosities." They were on their way to find it, when a famous authoress laid her hand on my shoulder and asked the name of one of the characters in Cymbeline. It seemed a mental stunt, to go from a five-and-ten-cent store to Shakespeare, but so one is expected to dispense information.

My secretary supplements my work, while a librarian and playroom director looks after the books and the children. The library is available for all hotel guests, and an outdoor playground gives an overflow place for the myriads of children whose merry laughter attests their enjoyment of quarters especially their own.

So women work in the various departments of the Hotel McAlpin, and the associated hotels under the same management. Statistically the bureau of employment reports that the women average 60 per cent efficiency, and 75 per cent attendance.

I believe there are three "C's" for women to learn in business,—courage, courtesy, and coöperation. First we must have courage to find a job and the courage to keep it and make good on it, once it is found. We must also have courage to ask for and receive pay that is commensurate with our work, remembering we are usually taken at our own valuation of our services. Women should learn, too, to control money, so that they may be trusted to manage large investments as do men. Then we must be courteous to each other. This is, I think, more important than being courteous to guests. The latter comes naturally, the other must be rigidly learned. And last, we must lay hold upon coöperation. We must forget all personal things for the good of the whole, of which, after all, we are at greatest only a very small part.

Until women equal or excel men in work, they must be willing to complement men's work; and, after all, does not greater success come when work is carried on jointly by both men and women working harmoniously together? I am sure it has gone far in the success of the hotel with which I am connected. Hotel work is housekeeping on a larger and more systematic scale and, as women should be the natural homemakers and people come more and more to live in hotels, the opportunities in the work are manifold and limitless. The work requires patience, much tact, a sense of humor, and more good temper than any one mortal usually possesses.

THE CONTRIBUTION OF EUROPEAN EXPERIENCE ON LOW DIETS TO OUR TEACHING OF DIETETICS[1]

AGNES FAY MORGAN

(Concluded)

Reduction in basal metabolism. A less obvious result of undernutrition was the generally observed lowering of basal metabolism which accompanied or followed the loss of weight. The most complete study of this point was made in the Carnegie nutrition laboratory by Benedict, Miles, Roth, and Smith (22). This well planned experiment was carried out on 24 normal young men, 12 of whom existed for four months on a diet providing only ½ to ⅔ their normal caloric requirement, and 12 of whom acted as controls on normal diet, except for a period of three weeks of lowered food intake. The results of this study may be summarized as follows:

1. There was a gradual reduction in weight on the lowered intake, till at the end of 3 to 10 weeks, an average loss of 12 per cent of initial weight was observed. The body weight remained fairly constant at the new level. The diet had at the same time been decreased from a fuel value of 3200 to 3600 calories down to 2300 calories net.

2. The average total heat output of the subjects measured by the gaseous exchange method, all subjects being massed in one respiration chamber, had decreased 25 per cent at the end of the weight reduction period.

3. The heat output per kg. of weight and per sq. m. of surface averaged 18 per cent lower than at the beginning. (Note that in Benedict's (23) study of a 31 day complete fast, the heat output measured in the same way had fallen 28 per cent.)

4. The nitrogen balance was negative throughout, the average total loss of nitrogen being 150 grams for each subject. The daily nitrogen output on the low diet was 10 grams, on normal diet 13 or 14 grams.

5. The pulse rate and blood pressure were lowered.

6. The skin temperature was slightly subnormal in some subjects; the rectal temperature remained normal.

The second squad on low diet for 3 weeks lost about 6 per cent of body weight.

[1] The first installment of this article appeared in the February number.

It is stated that in general the subjects felt no bad effects from the low diet, although they complained of cold and some lassitude. Some reduction in neuro-muscular activities of these men was noted by Dr. Miles, but no such marked decrease as was observed in the basal metabolism. An interesting phenomenon reported by this same investigator (24) is that of a marked lowering of sexual impulses in the subjects.

Zuntz and Loewy (16) had previously noted a relatively excessive lowering of energy production in their own metabolism after a body weight reduction of 10 or 12 per cent. They postulate a specific reduction in metabolism with relatively large decrease in active cell substance.

Jansen's (3) subjects with body weight not above 60 kg. on 2100 calories and 60 gms. daily protein intake reached stationary weight and nitrogen equilibrium. When only 1600 calories were given without decrease in protein ration, continued nitrogen loss was observed. A lowering of basal metabolism in each of these 13 subjects was noted.

Joffe, Poulton, and Ryffel (25) report a study of prolonged undernutrition in which the resting metabolism was as low as in complete starvation. The pulse was slow. They found no increase in efficiency during work as measured by the rate of increase in respiratory exchange at different rates of walking.

Efficiency during work on low diets. The result as to working efficiency reported by these English investigators is in accord with the experience of the German observers, but opposed to that of Benedict and his co-workers (22). Jansen (3) noted an actual decrease in efficiency in his subjects and much irritability and exhaustion following an enforced march. The increase above basal metabolism measured 12 hours after the walk and persisting for 24 hours, was in no case less than 30 per cent, and in at least one case was as high as 50 per cent.

Zuntz and Loewy (26) found an excessively increased consumption of energy during a similar march, and also during the period following this exertion.

The Boston investigators (22) report an increased efficiency in horizontal walking during the period of undernutrition. This gain over the normal was found to be 22 per cent of the total heat output after four months low diet, and 14 per cent after 20 days. Measured per horizontal kilogram-meter, the corresponding figures are 14 and 8 per cent. They conclude that a marked saving in energy requirement for walking may be ascribed to the use of reduced diet, whether the saving be considered on the basis of gross energy or requirement per horizontal kilogram-meter.

The discrepancy between these experimental results may possibly be explained as due to the difference in duration of the periods of undernutrition observed. The German subjects had involuntarily subsisted for nearly two years upon the low diet while the American subjects had lived at this level for only four months.

It is possible that some vital stores in the latter had not yet been depleted, or that their condition had reached some intermediate stage favorable to economical oxidation, which had been passed by the German subjects.

The varying results of these investigators are not in accord with the work of Lusk and Anderson (27) on efficiency during muscular work following food ingestion. They have shown that for dogs, the quantity of energy needed to move a given body weight is the same regardless of the state of nutrition of the animal. Their dog performed 0.584 kilogram-meters of work to move one kilo of body weight one meter horizontally when fasting, and 0.580 kilogram-meters for a similar amount of work done by a well nourished dog.

War edema. A most interesting and widely observed symptom of partial starvation is that of edema. This phenomenon has been noted in many previous wars and in times of famine, but has appeared in the recent war in an astounding proportion of the population of certain countries. In the recent excellent review of the literature on this subject by Maver (29) attention is especially directed to the apparent fact that no specific vitamin deficiency is involved, but that low caloric intake is chiefly responsible. The complication of scurvy occurs occasionally in the course of the edematous disease, but according to Guillermin and Guyot (30), the two conditions cannot be considered as necessarily related. The wet type of beri-beri shows also a certain amount of edema, as does hydremic anemia. The latter disease is mentioned as of frequent occurrence among the victims of war undernutrition. Schittenhelm and Schecht (31) of Kiel, published five articles in 1919 on war edema, in which they describe their experiments to show that salt and water excretion was unimpaired, and that a marked decrease in the proteins in blood plasma usually occurred. They believed either the excess of carbohydrate or the shortage of fat and protein, or both, may be the cause of the water retention. They state that this disease is comparable to the "mehlnahrschaden" of children fed on carbohydrate-rich and fat-poor patent foods.

Bigland (32), who studied the edema found among British troops in the East, in India, and in Turkish prisoners of war, believes this symp-

tom due to hyperactivity of the supra renal glands induced by starvation, and that the second stage may be pellagra. Maase and Zondek (33), Lange (34), and Knack and Neumann (35) describe the suddenness and apparently epidemic character of this dropsy as it appeared in Poland and in Germany in 1916 and 1917. It was most severe among prisoners of war, inmates of institutions, and men who were forced to do hard work, exposed to the cold on low diets with little fat and protein. Bed rest or increase in the amount of fat in the diet or both were found to effect rapid cures. Most of the authors believe that kidney excretion is not at fault in the causation of the disease.

The experimental edema recently described by Kohman (36) was produced in animals on very low protein diets of a fluid character. Foods yielding acid oxidation products tended to produce the edema more readily than others, and high salt intake had a somewhat similar effect. The conclusion drawn is that the low protein and total energy and high water content of the diet rather than high carbohydrate or low fat are to blame. This is not in accord with the statement by Hülse (37), who studied edematous cases over a number of years, that high protein diet leads to more edema than carbohydrate diet of the same caloric value. Nitrogen retention on high protein diet was shown by blood analysis to be due to interference with the process of deamination. The author supposes that some abnormal intermediary substances formed during amino acid metabolism are responsible for the unusual water retention.

It is probable that some tenable physico-chemical explanation will be forthcoming eventually to explain the occurrence of water retention in such widely varying conditions as hydremic anemia, starvation, beriberi, nephritis, pregnancy, infantile gastro-intestinal disorders, and scurvy. The infrequency of edema with the acidosis of diabetes renders somewhat doubtful Martin Fischer's (39) well known theory that all edema is due to colloidal tissue swelling in the presence of increased concentration of the hydrogen ion.

Effect upon diabetes, gout, and cancer. A striking comment upon the effects of war diet found occasionally is that concerning the so-called metabolic diseases. Diabetes, gout, eclampsia and cancer were found in Germany at least to have decreased in severity and frequency during the war period. Magnus Levy (39) says that the increase of deaths from diabetes in Germany from 1900 to 1914 was from 245 to 444 per year. From 1915 to 1918, the number decreased to 202. He believes that the former rapid increase must be ascribed to over-eating. Loewy and

Strauss (40) and Determann (28) mention not only the decrease in the number of cases of diabetes and gout, but the decrease in the severity of old cases. Similar observations have been made in England and France.

The bearing of this curious relation upon the often repeated saying that these are diseases of plethora is self evident. One wonders, however, whether the net result to the public health should be struck in favor of the underfeeding with its inevitable tuberculosis, edema, and rickets, or the overfeeding with its possible cancer, diabetes, and gout.

Effect of inadequate protein feeding. Practically every study of nitrogen balance reported shows constant and often large body nitrogen loss on the war rations. Some of the studies were made in nutrition laboratories, some in prison camps, and some in hospitals. Since so little of the protein available in the diet was of animal origin, not much attention was paid to qualitative differences in the nitrogen sources. The already quoted experiments of Zuntz and Loewy (16, 26) and of Jansen (3) deal with body nitrogen loss in some detail. Jansen's subjects were losing about 2 gms. of nitrogen daily with an intake of 60 gms. of protein and 210 gms. of carbohydrate, yielding 1600 calories. When 500 gms. of lactose were given in addition, nitrogen equilibrium was nearly attained. Kestner (41) fed six undernourished patients in a German hospital 110 to 120 gms. of meat in addition to the regular hospital diet, and found a large positive nitrogen balance with an intake even as low as 8 gms. of nitrogen. On 12 or 13 gms. of nitrogen, a retention of 6 to 9 gms. was observed. He concludes that the protein depletion in these subjects on war diet must have been extreme. A French observer, A. Benoit (41), who was long a prisoner in Germany, carried out nitrogen balance determinations on 78 Russian prisoners for 16 months. The average daily ration contained 48 gms. of protein, 14.6 gms. of fat, and 332 gms. of carbohydrate, yielding 1702 calories. No loss of body weight and no nitrogen loss or disturbance of any kind was observed in the 78 subjects. The protein in the food was distributed as follows: 49 per cent from bread, 23.3 per cent from cheese, 16.3 per cent from meat and fish, 11.5 per cent from various vegetables such as potatoes and beets. This total per cent of 39.6 from animal sources is generous indeed, even though the energy supplied in the ration is small. It is probable that very little physical exertion was undertaken by these subjects. The average figure given by Benoit, 0.72 gms. of nitrogen per kg. of body weight, is a lower minimum than that usually quoted. Although nitrogen equilibrium has many times been demonstrated on

0.6 and even 0.5 gm. per kilo, the experiments have seldom included definitely restricted caloric intake.

In the exhaustive experimental study by Benedict and others (23), each of the subjects lost from 1.5 to 4 gms. of nitrogen daily over the whole period of 4 months. The total losses were from 130 to 252 gms. The authors believe that the nitrogen lost in this way represents compounds found in the fluid bathing the cells, so-called "surplus nitrogen," and the loss of which accounts for the lowered basal metabolism observed. Furthermore, they claim that the frequency with which nitrogen equilibrium was attained on an average intake of 1950 calories and 10 gms. of nitrogen furnishes further evidence in support of Chittenden's low protein theory.

The articles by Hindhede (7) in connection with this same controversy are most interesting. He has frequently compared the plan of food control in Denmark with that used in Germany to the evident disadvantage of the latter. The Danish food board, made up of four farmers and four scientists, refused to allow the farmers to feed grain and potatoes to animals, and therefore insisted on a very great decrease in the number of pigs and cattle raised. As a result meat was scarce but breadstuffs and potatoes were plentiful. Hindhede (42) reports a striking decrease in mortality in Copenhagen during the war, which he attributes to the low protein vegetarian diet thus enforced. The principles assumed by the Danish government on his recommendation were:

1. No attention need be paid to the nitrogen minimum, since it can not be reached for human beings if enough calories are given.
2. Fat is not necessary.
3. Bran is a valuable food and well digested by man.

One need hardly point out the debatable character of these assumptions. At any rate under such a regime, and with a partial condition of alcohol prohibition, the death rate in Copenhagen for men 25 to 65 years of age fell 34 per cent and for women 17 per cent. This is compared with the greatly increased death rate in Germany where the Voit-Rubner standard of higher protein was in effect. The difference lies probably chiefly in the level of caloric intake available to the population of the two countries rather than in the character or quantity of the protein. Rubner (44) and other German physiologists are still convinced apparently that an excessively low nitrogen content in the diet is inadvisable, even though a German scientist is quoted by Taylor (45) as saying in 1917 that the Chittenden standard of feeding was as valuable to the

German nation as the Hindenburg standard of fighting. Perhaps this opinion had a new and different meaning in 1919.

The carbohydrate in war diet. An excessively large proportion of the food accessible to the European population during the war was made up of starch and cellulose. Sugar was scarce after the first year, and for sweetening saccharin was widely used. This had long been more generally in use in Europe than in America, but during the war it became a staple part of the cook's equipment. It is reported to be the custom there even yet to carry a bottle of saccharin tablets in one's pocket to sweeten the food obtained in restaurants. Such a widespread and prolonged experiment in the use of saccharin without reported detriment to health will tend to establish the sense of safety in the use of the sweetening substitute for diabetics, or for economy in such times of sugar shortage and high prices as we have recently witnessed.

The use of a diet made up more largely of carbohydrate than was formerly considered normal is blamed by Loewy and Brahm (5) for much of the edema, gastro-intestinal disturbances, and lowered resistance so widely observed in Germany. They state that the average war diet contained, instead of the usual 60 per cent, 68 per cent of total calories as carbohydrate in April, 1916, and 70 per cent or more in April, 1917. Much more than the usual proportion of this carbohydrate was from bran and similar indigestible substances.

It is interesting to speculate as to the possible relation of this preponderance of carbohydrate to the decrease in occurrence of diabetes. To be sure, the amount of sugar consumed was greatly lowered even though the total amount of glycogenetic food was increased. This makes no less puzzling the contrast in frequency of diabetes among the carbohydrate-fed natives of India, for example, and the Germans on war diet. The determining factor of course may be the total quantity of food available rather than the relative amount of carbohydrate. It must be remembered that the diabetes observed in India by McCay (46) is said to be confined largely to the over-fed upper classes.

Gastro-intestinal disturbances. The evidence as to interference with normal digestive activity by the unusual character of the war diet is somewhat conflicting. In England the considerable amount of complaint of diarrhea and fermentation resulting from the use of the bran-containing war-bread was described by Hutchinson (47) as due largely to other causes. Kraus (48) and Loewy and Brahm (5), at the end of the war, stated that gastro-intestinal disease had been greatly increased

among civilians in Germany by war diet. In the letter to the Journal of the American Medical Association (18) from Vienna in December, 1919, however, it is stated on the authority of T. Weiss that a marked decrease in diseases of the digestive organs and in gout and diabetes had occurred, although rickets, edema, osteomalacia and tuberculosis had greatly increased. On the whole the impression gained from the literature is that of noticeable increase in diarrhea, flatulence, intestinal catarrh, and similar evidences of the effect of a largely vegetarian diet.

The minimum fat requirement. One of the first foods to become scarce in Europe was fat, and as the war progressed, the fat shortage became one of the most troublesome features of the war diet. Taylor (45) has described the acute situation in this regard as it existed in Germany in 1916, and even in England the provision of fat of any kind was a difficult problem. Hoover (15) mentioned the experience of the Belgian Relief Commission in providing 40 gms. of fat daily for the Belgian populace. This amount was apparently enough for the maintenance of health in all but adolescent children, who rapidly fell victims to tuberculosis until this was checked by increase in their fat ration. Starling (49) discussed the problem of fat in the diet from the point of view of dietary statistics with the conclusion that the continental standard of 18.4 to 29 per cent of calories from this source was not excessive. This is contrasted with the 34 to 39.4 per cent from fat in American dietaries. The Inter Allied Food Commission, in 1918, laid down 75 gms. as the minimum of fat in 3000 calories.

Some of the authors, as noted before, ascribe the edema of starvation to lack of fat, and Aron (50) and Stepp (51) have been particularly emphatic in the claim that fat foods are indispensable in the diet for other reasons than their possible vitamine content. The psychological value of fat in the diet for the prevention of early hunger, its culinary value, and its service in decreasing the bulk of the food, are all excellent reasons in themselves for the desperate attempts that were made to retain some fat in the war ration. The most important function of fat-containing foods seems, however, to be that of furnishing the so-called fat-soluble vitamine. It is difficult to discuss the effect of either fat-poor or salt-poor diets without at the same time considering the rôle of this vitamine.

Bone diseases. Disturbances of bone growth and function, such as rickets, osteomalacia and osteoporosis are reported as greatly increased in frequency in Germany and Austria, and even in England the problem of the prevention and cure of rickets has become serious. The dietetic

treatment of these diseases consists usually of the addition of cod liver oil, milk fat, phosphorus, and calcium to the usual fare. Whether such therapy is effective because of its fat-soluble vitamine, its fat, or its calcium and phosphorus content, there is little uncontested evidence.

Engel (52) of Westphalia in a recent interesting communication to the Lancet, states that a shocking proportion of children there under ten years of age are deformed as a result of persistent rickets. He estimates that ten per cent of the young children are, or have been, actively rachitic. Infants, on account of more prevalent breast feeding, have apparently been in a more favorable position than older children, since the infant mortality has fallen in about the proportion in which the mortality of children two to five years old has risen. This greatly increased spread of rickets is ascribed to lack of milk and other animal foods. The recent vigorously pursued theory of E. Mellanby (53), that rickets is caused directly by the absence of an antirachitic food factor similar or identical with the fat-soluble vitamine, is supported by these facts.

Koepschen (54) has reported an endemic bone trouble among adults in Vienna and in the German cities, accompanied by edema, pains in the bones, and hemorrhagic tendency, which was being treated by the administration of phosphorus and calcium salts, since cod liver oil is unobtainable. He cites 19 reports on the subject in German journals.

Two reports on osteomalacia, those by Alvvens (55) and Böhme (56) are of interest in that they emphasize the close relation between this disease and rickets. The overshadowing importance of the internal secretion of the ovaries in the causation of osteomalacia is brought somewhat into question by the large numbers of cases among undernourished men as well as women, and by the speed with which the condition is reported to yield to cod liver oil treatment.

An interesting article by P. Grabley (57) in 1919 ascribes the war edema as well as endemic bone trouble and growth deficiency to faulty mineral metabolism and to insufficient salt intake. He makes some general statements about the physico-chemical relations of the electrolytes to inactive purely organic substances in regulating the volume of body fluids. It seems that inorganic calcium compounds and other salt mixtures were widely used in nearly all European centers in the war bread in an attempt to supply the elements which the lacking milk, eggs, vegetables and meat usually provide. If Grabley's statement be accepted, this inorganic substitute was not altogether sufficient.

Occurrence of scurvy and other deficiency diseases. As might be expected, a considerable incidence of scurvy, beri-beri, and pellagra was noted

among both civilians and troops. An excellent survey of reports of scurvy epidemics during the war was given by Hess and Unger (58) in 1919. Most of the cases among soldiers were found in the Italian army, in British troops in Macedonia, in South African labor troops, among German prisoners in Turkestan, and among Russian prisoners in Germany.

The well known researches carried on at the Lister Institute on the antiscorbutic factor in food seem to have been inspired chiefly by the appearance of scurvy in the British army in the East. The British government in 1917 sent a corps of gardeners to Mesopotamia to plant vegetables for the use of the troops there in the effort to curb the spread of this disease.

Most of the scurvy in Germany as reported by Morawitz (59) occurred among civilians although some cases were found among soldiers on the Eastern front. An increase in the incidence of infantile scurvy, however, appears to have occurred in all the central countries. Tobler (60), Epstein (61) and Pollak (21) report from children's hospitals and orphanages in Berlin and in Prague, a large number of cases of Barlow's disease among children two to fifteen years of age, an age group heretofore practically free from scurvy. They ascribe this condition to the long continued diet of dried and otherwise preserved foods as well as to the lack of fresh and unheated food.

Pickens (62) referred to 50 cases of scurvy in four months as treated at the Poor Law Hospital in Glasgow, and Harlan (63) to 16 cases in three months at Newcastle. This unusual number of scorbutic sufferers were nearly all middle aged civilians, mostly men who lived alone and who evidently had been living largely upon cereal foods as a result of the shortage of potatoes.

Beri-beri is reported as having appeared chiefly among colonial troops from the far East who subsisted upon rice and similar restricted diet, and pellagra among Italian and British troops in the East. The recently published report (64) of the Medical Research Committee in England on accessory food factors contains much interesting and illuminating material upon this subject. The chief dietetic reason to which the committee seems inclined to ascribe the appearance of pellagra is that of low protein of poor quality.

It is impossible here to do more than refer to the greatly increased volume of research upon the vitamine content of foods and the causation of the so-called deficiency diseases which has been stimulated by war

necessity. The more obvious references, of course, are to the work on the anti-scorbutic factor carried on under the direction of Dr. Harriette Chick at the Lister Institute in London; that on the fat-soluble vitamine content of foods by Drummond at the Cancer Research Institute; the work on pellagra by Bigland and Enright of England, and Volpino of Italy; on the antirachitic factor by Mellanby; as well as the well-known work along similar lines in our country by Osborne and Mendel, McCollum, Steenbock, Underhill, Williams, Hess and Unger, and a long list of others. Attempts at quantitative measurements are being made by many of these investigators, and a little of the haze which befogs our vision of this subject is being dispersed.

To the student of dietetics, little that is really new can be said to have been brought forward by the war underfeeding of Europe. However, a wealth of valuable confirmatory data has been accumulated, and valuable illustrations from the war history will undoubtedly become part of our teaching and lecturing lore. The stimulation of interest in the problems of human nutrition which this great experiment has brought about is of course the chief item upon the credit side of the war diet experience. It remains for those who are concerned with the development of education in these matters to make use of the material so lavishly provided by the necessities and privations of war.

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THE HIGH SCHOOL CLOTHES LINE

FROM THE HOME ECONOMICS DIVISION, IOWA STATE COLLEGE, AMES

Stage Setting: Living Room
Group of High School Girls

[*Katherine and Ada on davenport*]

Characters: Katherine, in wool middy outfit
Ada (short, stout), in made-over dress
Genevieve, in wash middy and dark skirt
Helen, in shirtwaist and skirt
Dorothy (athletic), in sweater and plaid skirt

Models:

No. 1 Short, stout—coat too small, dark dress, white shoes
No. 2 Small—white middy, blue collar, dark skirt
No. 3 Frivolous—middy, plaid skirt, jewelry
No. 4 Made-over dress
No. 5 Tall, stout—blue tricotine, one-piece dress
No. 6 Large—brilliant red dress
No. 7 Tall, round-shouldered—eton dress
No. 8 Frivolous—georgette, French heels, etc.
No. 9 Neat—well-pressed clothes
No. 10 Model No. 2, with apron over school dress
No. 11 Neat house dress
No. 12 Kimono, bedroom slippers, cap, etc.
No. 13 Run-over heels, careless
No. 14 Hairdress exaggerated
No. 15 Hairdress neat, becoming
No. 16 Evening dress, extravagant
No. 17 Short—organdy, vertical lines
No. 18 Tall—organdy, horizontal lines
No. 19 White organdy, horizontal lines
No. 20 White voile
No. 21 Colored voile
No. 22 Colored organdy
No. 23 Silk dress

Katherine. Ada, I am to have an allowance for my clothes, too. Today is the first I every knew how much money Dad makes. His income is about $2000 a year, and there are five of us. Mother and I talked over my clothes for next year and I am going to do

all my own planning. They are going to give me an allowance of $135 for my clothes.

Genevieve. My, that's not much! I saw a swell winter coat marked $135, and I tried to make Dad get it for me.

Katherine. I think it's a lot. It's really more than my share, for Dad explained to me all about our family budget. We have just about $170 each month for everything. Our rent is $40, and Mother says that now we have no garden it takes nearly $60 for food.

Genevieve. Can't you spend all the rest for clothes?

Katherine. Mercy, no! Dad says he must save $25 a month, and then there are electric light bills, telephone, gas, laundry, newspapers and magazines—an awful lot of things. Thirty-five dollars a month is what Mother plans for clothes, and that leaves only $11 for all those other bills. Honest, I don't see how Dad ever has any money for movies, or anything like that.

Genevieve. Oh, I can get anything I want, if I just tease hard enough.

Ada. I don't think that's right. That's selfish. You get more than your share and somebody in the family gets left out.

Genevieve. Well, maybe it is. But Dad never talks things over with us. I don't believe Mother knows how much money he makes. We just spend all he'll give us.

Ada. Do you girls remember what I did the first year with my allowance? I shall never forget how I wanted white kid shoes. Father said we positively could not afford them. When I got my allowance, the very first thing I bought was the white kid shoes. I never thought about needing a winter coat. When it was time to get one, I didn't have any money left. Mother said I must keep to my allowance, so I had to wear my old military coat which was too small. [*Model 1.*] Do you remember?

Katherine. But you had your white shoes.

Ada. Yes, but I did not have a thing to go with them. White shoes look awful with dark dresses.

Katherine. Ada, this is the way I am going to start. I am to get $11.25 every month. The first thing I bought is this middy. How do you like it? [*Katherine stands and turns for inspection.*]

Girls. Isn't it good looking? How much did it cost?

Katherine. The whole $11.25, but it is all I am going to get for school until after Christmas. I have some wash middies like yours, Genevieve, and this skirt is made out of one of Mother's. [*Model 2.*]

Genevieve. Speaking of middies, isn't Marguerite the limit, the way she fusses up? Who ever saw a sailor all decked out in jewelry, with his necktie spread out, and plaid trousers? [*Model 3.*]

Ada. I feel differently about made-over clothes since I have a budget. How do you like my dress? [*Ada stands and turns.*]

Genevieve. Is that a made-over?

Ada. Yes, and I'm proud of it. Mother is an old peach at fixing things up. She is a regular camouflage artist. [*Describes dress and gives cost of new material.*]

Katherine. I'm going to get busy and make some clothes for myself. It'll make my money go farther. Remember that old plaid skirt of mine? Well, there's a skirt of Mother's too, that got torn. I'll bet I can put the two together and make a dress that looks as good as yours, Ada. Let's find a good pattern. [*Model 4.*]

Ada. I've been sewing, too. Bloomers! Good long ones! Warm woolly jersey ones! I tell you, I'm going to be comfortable this winter. No more freezing for me. [*Lifts skirt and shows bloomers.*]

Genevieve. Don't tell me you're going to wear long underwear! If you do, Mother will make me, sure.

Ada. I should say so.

Katherine. We really ought to, girls. I was frozen all last winter, only I wouldn't acknowledge it. I know that was why I got the "flu."

Ada. I like bloomers anyway. I can climb around all I want to when I have them on.

Genevieve. Have you seen Louise's new dress? Doesn't she look well in it? She is so large and tall, but you hardly realize it when she wears that dress. [*Model 5.*]

Ada. I wonder why.

Genevieve. I guess it is because it is dark in color, and fits loosely. Those side pieces seem to do something, too. Wasn't that a funny story that the clothing specialist told us about a large girl who loved to wear bright colors. It reminded me of Ruth in her red dress. [*Model 6.*]

Ada. What was it?

Genevieve. A large girl went to a dressmaker to get a red dress made. The dressmaker said she would make her a pretty brown dress and trim it with henna, but the girl still insisted on the red dress. Finally the dressmaker told her that nature dressed the larger

animals in neutral colors, but the small dainty creatures have color to make up for their lack of size. The elephant always wears taupe, while the humming bird wears brilliant colors.

Katherine. Emma's new eton dress is real camouflage. It covers up her round shoulders. The loose jacket and wide belt fill in the hollow back. [*Model 7.*]

Ada. Here comes Helen. I never could look so nice as that in a shirt-waist and skirt.

Helen. I heard you girls talking about my waist. Mother doesn't allow me to wear georgette waists. But I do want to show you my new shoes. Aren't they good looking?

Katherine. Do you like those heels?

Helen. You bet I do. You can walk miles without getting tired. Mr. Smith, the shoe man, told me all about this straight last. It is the only kind of a school shoe. How do some girls wear those horrid French heels? [*Model 8.*]

Genevieve. Well, I never thought I'd come to it, but I'm wearing that kind and I like 'em, too.

Katherine. Look, everyone of us has on the same kind of shoes. Aren't we getting sensible!

Ada. My, that's a good-looking skirt, Helen!

Helen. I've just spent hours pressing it. No matter how nice your clothes are, if you don't press them they don't look right. "Well pressed is well dressed," you know. [*Model 9.*]

Genevieve. You're right, Helen. Some girls look as if they slept in their clothes. Mary Jones just steps out of hers at night and they "sure" do look it. She doesn't have a single clothes hanger. Her Sunday dress is all out of shape. It looks as if it hung on a nail, the way it is punched out in the back.

Katherine. You have to keep them clean, too. Mother says avoiding spots "beats" removing them. I always wear an apron when I am helping with the dishes. Right over my school dress. [*Model 10.*]

Helen. I wear a house dress on Saturday morning. It is just great to work in, and I can answer the doorbell without being ashamed. [*Model 11.*]

Genevieve. I stayed with Mary Jones last Friday night, and you should have seen her trying to work Saturday morning in her kimono and breakfast cap. She certainly was a scream. [*Model 12.*]

Ada. I am not surprised at Mary Jones' doing that; she always looks so shabby. Her shoes are run over at the heels and always muddy because she won't wear rubbers. [*Model 13.*]

Helen. Dad is a stickler about shoes. He says repairs and polish keep our bills down. Shoes and hats dress one up, don't you think?

Ada. Girls, I did get a coat *this* winter. [*Pause: Ada gets coat and tries it on.*] How do you like it? It cost $35. I saved three months of my allowance last summer for it. [*Gives merits in detail.*]

Katherine. Let's see your new hat.

Ada. O, this one? It's my last year's one reblocked. [*Ada gets hat.*]

Katherine. Let me try it on.

Dorothy. [*Entering.*] Hello, girls, what are you talking about?

Girls in chorus. Clothes! and hats!

Genevieve. That's a good-looking hat of yours, Dorothy.

Helen. How would I look in Dorothy's hat?

Dorothy. You couldn't wear it.

Helen. Why not?

Dorothy. You never could get it on over that hair.

Helen. [*Tries to put on hat.*] I guess you're right. I wish I could wear a hat like that. It's so pretty.

Genevieve. That's what you get by wearing your hair in that ridiculous way. Helen sits in front of me in school and I just can't see around those huge puffs.

Katherine. Would you like to see the silhouettes from our class party? They are a scream! Guess who this is. [*Holds silhouette A.*] [*Model 14.*]

Dorothy. Ruth?

Katherine. No.

Genevieve. Nelle?

Katherine. No.

Ada. I bet it is Alice.

Katherine. We all comb our hair alike, but you are all fooled. It's I.

Dorothy. That's right, you did comb your hair with such big puffs. But it's lots more becoming now. Why did you change?

Katherine. Brother kidded me so much that I finally changed it to please him, and everybody tells me it is better this way.

Ada. Your face is too narrow for such big puffs.

Katherine. Who is this? [*Holds silhouette B.*]

Helen. It's Sylvia. [*Model 15.*]

Katherine. You are right. She—

Genevieve. She certainly combs her hair prettily. Mother said she made the best appearance of our whole class.

Helen. I don't suppose you *old critics* approve of me.

Ada. Your ear bobs are too big for your face.

Helen. Thank you!

Genevieve. Helen, you need not get peeved, it's the truth.

Katherine. Let's change the subject before we scrap.

Dorothy. Girls, what are you going to wear to Mary's party?

Helen. Eloise is going to doll up in her evening gown. Some gown! You'd think she was a silly butterfly. [*Model 16.*]

Ada. I am going to wear my orange organdy. [*Model 17.*]

Dorothy. Those up-and-down lines do make you look taller, and orange is good with your complexion.

Ada. I do like orange for a change. I get so tired of just blue and pink.

Genevieve. Josephine is going to wear her organdy, too. The bands make her look shorter. [*Model 18.*] And Sue is going to wear her graduation dress. [*Model 19.*]

Helen. The seniors certainly looked fine. I like white best, myself, but it was pretty to have some of the girls wear colored organdies and voiles for graduation. [*Models 20, 21, and 22.*]

Genevieve. Helen, did you really make that silk dress you wore last Sunday? [*Model 23.*]

Helen. Yes, "Simplicity is the keynote," as Miss Smith says.

Genevieve. Going back to allowances. Katherine, what did you say your father allows you for your clothes?

Katherine. $135, that is, $11.25 a month.

Genevieve. Do you have to get shoes, stockings, and everything?

Katherine. Yes.

Ada. I do it, and it really works. Come over and I will show you my budget book.

Genevieve. I am going home and persuade the folks to put me on an allowance. It will make it so much easier for me when I go to college.

Curtain

FOR THE HOMEMAKER

A BRIEF HISTORY OF A CHILD WHO HAS NEVER BEEN ILL

JESSIE RICH ARMS

The little child is just twenty-eight months old and of the weight and height required by the standard score-card of the American Medical Association for the normal child of that age.

She was born during the frightful "flu" epidemic which swept the country in 1918 and caused the death of the attending physician ten days after the child was born. Her weight at birth was four and one-quarter pounds; a day nurse only was available, and that for a short time; and the case was dismissed from the hospital on the fifth day because of the large number of influenza patients there. At the end of the third week her father came down with the "flu;" any sort of nurse was entirely out of question; and help in the kitchen of a reliable or safe character was transitory.

Thus the tiny life began in contrast to the careful preparation made for her coming. The best hospital accommodations had been secured, and help at home to care for the bedding and clothing had been selected after careful testing for the social diseases so common among help in the South. However, the child inherited a good constitution, and, despite the fearful conditions, the essential factors of child welfare could be controlled and enforced, and at twenty-eight months she has never been ill.

The mother was able to feed her in part during the first twelve months. The supplementary food was modified cow's milk and after the eighth month small quantities of orange juice. The milk was special baby milk with low bacterial count and modified to a given formula with boiled water and cane sugar. The nipples, bottles, milk, and baby were never entrusted to the colored help, but were looked after by the mother. The feedings were given at regular intervals and, after the eighth week, on the four-hour schedule.

At thirteen months the child was taking whole cow's milk and was ready for strained oatmeal and egg yolk. Gradually spinach, string

beans, peas, carrots, and prunes—all strained—were added to her diet with dry toast or stale bread, baked potato, fruit gelatin, and baked apple.

After the middle of the second year (20 months) her menu could be formed from the following simple dishes, with the addition of one quart of milk a day: string beans, peas, spinach, carrots, baked potato, scraped beef, chicken, lamb chops (all meats in very small amounts), eggs, cream vegetable soups, prunes, orange juice, pineapple juice, baked apple, cereals (well cooked), gelatin, custard, and tapioca. Her schedule would present some such form as the following:

7.00 a.m.—Warm milk, 8 ounces; oatmeal (well cooked), 3 tablespoonfuls with 2 tablespoonfuls milk; toast, 1 slice.

10.00 a.m.—Orange juice, 4 tablespoonfuls; 1 thin slice of bread and butter.

12.00 m.—One egg (soft cooked); string beans (cut), ¼ cup; ¼ baked potato; gelatin, ¼ cup; milk, 8 ounces.

3.30 p.m.—Milk, 2 ounces; 1 graham or arrowroot cracker.

6–6.30 p.m.—Cereal, 3 tablespoonfuls, with 2 tablespoonfuls milk; toast, 1 slice; milk, 8 ounces.

The menu provides from 1000 to 1100 calories fuel value, or about 40 calories per pound of the child's weight.

At present the schedule is very similar with the addition of well-cooked rice, bacon, asparagus tips, and homemade ice cream. The little girl has a great liking for the green vegetables and often says, "More beans, more beans, please." She has never had a piece of candy and does not get "tastes" from the adult table. The other day she asked for a piece of tuna fish and was told that fish was not for little girls but for daddy and mother. "All wite, I have fish when I get big," and nothing more was said.

The child has always had her own bed, and has always slept alone in a room opening onto the sleeping porch. The door from her room to the porch is always left open, and often as she is tucked in at night she says, "Fresh air, more fresh air." She takes a nap in the middle of the day, directly after her dinner, and goes to bed at seven o'clock.

From the time this little girl has been able to hold up her head, her father has romped with her in the late afternoon before supper time. She is not afraid when he picks her up by her feet or tosses her across the bed, but says, "More, more, Daddy, do it again."

She enjoys the daily bath which is given before the midday meal. Her clothing is simple and suited to the southern climate. Rompers and overalls are worn during the morning and in the afternoon if the type of play calls for them. Another factor in her good health is the fact that she has not been turned over to the care of a nurse maid.

And so for twenty-eight months this little girl has enjoyed perfect health. The diet prescribed by her physician has been carefully followed; she has had fresh air, plenty of sleep, the daily bath, and exercise. She has never been dragged out to a "movie" nor had her regular habits infringed upon to suit some other program, and she has had close supervision of all the details of child life, while her parents have had the pleasure of watching her development day by day.

TEA[1]

SUSANNAH USHER

(Continued)

INDIA, CEYLON, JAVA, AND SUMATRA TEAS

The teas of India, Ceylon, Java, and Sumatra may be grouped together for several reasons.

The plants raised in these countries are Assam indigenous or a hybrid which is a cross between Assam indigenous and the Chinese varieties. Assam indigenous is most generally used.

They are raised, manufactured by machinery, and packed for shipment on large plantations owned for the most part by English or Dutch stock companies.

The machine manufacture may insure cleanliness, but it helps to produce a tea that has a large amount of tannin and body at the expense of mellowness, fine flavor, and good keeping qualities. Some experts think that India and Ceylon have not as yet imitated the finest grades of China teas, but this opinion is not so generally expressed as it was 15 or 20 years ago.

India and Ceylon are studying scientific methods of growth and manufacture, but sufficient knowledge has not been accumulated to make tea production an exact science.

[1] Copyright, 1921, by the American Home Economics Association.

As the methods of manufacture are similar in India, Ceylon, Java, and Sumatra the following description will suffice for all of them.

Plucking. The standard pluck is two leaves and a bud, that is, the flowery pekoe or bud, the first leaf or orange pekoe, and the second leaf or pekoe. The plucking of more leaves makes a coarser tea.

Withering. When the plucked leaf is brought in it is spread on large trays made of kissan cloth or other material that will allow free access of air. These trays are put on racks, and the leaf is withered by means of warm air circulated by fans. If the natural method is used the leaf is spread thin on withering floors.

Withering renders the leaves flaccid for rolling, but this is not the only change that takes place. According to investigations made for the Ceylon companies the leaf, during withering, loses water, and the oxidizing enzyme, the soluble matter, and the essential oil increase in amount; in consequence the leaf begins to change color, and to have an agreeable odor.

Rolling. The rolling is done by machinery instead of by hand. The twist is the most obvious result of the rolling, but various chemical changes take place. During the rolling the juice is brought to the surface, which facilitates oxidation. Tannin bodies undergo partial oxidation and the essential oil is increased.

Oxidation or Fermentation. The balls of rolled leaves are broken up in a machine made for the purpose, and the separated leaves are spread on tables or floors in a cool fermenting room. The oxidation continues until the leaf is a bright coppery tint. Various chemical changes take place which are not all well understood. Flavor is developed with the increase of essential oil, and color and body are developed with the oxidation of tannin. If too much tannin is oxidized, the tea has color and body at the expense of pungency.

Firing or Drying. The firing takes place in large machines or ovens fitted with trays to contain the tea. The temperature of the machine varies during different stages of the operation, the initial temperature being highest. Although the main object of firing is to stop fermentation and dry the tea, other changes take place which improve the quality of the tea.

The grading is done by sieves and the grades are usually named as follows, beginning with the finest: flowery pekoe, orange pekoe, pekoe (nos. 1 and 2), and pekoe souchong. The flowery orange pekoe contains the smallest, youngest leaves and many yellow tips; the orange pekoe

contains the next in size, and so on through the different grades. The yellow tips grow less and finally disappear in the coarser qualities.

As the modern methods of sieving, and cutting the leaf in equalizing machines makes it possible for older and younger leaf to get somewhat mixed in the above grades, it is not exactly true to say that flowery pekoe contains only the buds and small leaves.

Teas containing yellow tips bring a price out of proportion to their real value as they affect the looks of the tea rather than its "cup qualities." The buds and young leaves give rise to yellow tips, but careful manufacture, season, and district all affect the result.

The different estates all use the same grading, but the same grades may vary in quality; for instance, the pekoe from one estate may be equal to an orange pekoe from another. The term orange pekoe as used on the retail market seems to be simply a trade name for India and Ceylon tea containing tips, and is not a definite grade.

After sorting and grading, the teas are packed for shipment.

If the tea is packed warm it keeps better as no moisture is present.

Green Tea Manufacture. In India and Ceylon steam is used to stop the action of the oxidizing enzyme, the leaf is then rolled, fired, and sorted. The teas are made in imitation of China and Japan styles, but the quality does not as yet equal the teas of those countries, although Ceylon greens are improving in quality.

The teas of India and Ceylon are raised on large plantations owned and operated by English stock companies. The first English plantations in India were established about the middle of the last century, and in Ceylon somewhat later. The tea industry of India and Ceylon has made rapid strides in gaining the markets of the world. To raise money for advertising, a tax is levied on every pound of tea exported.

The northern tea districts of India are in the hills at the foot of the lower ranges of the Himalayas, and in the Brahmaputra Valley. The southern districts are mainly in Travancore.

In the northern tea districts the leaf is picked, after a winter resting period, from March to November; but in the southern districts where the climate is more tropical, the leaf is picked all the year round except for a time after the bushes are pruned.

Unlike the teas of China and Japan the first plucking does not make the best tea. According to an English authority the growth is slower toward the end of the season, and the young leaves at this time make tea with the finest flavor. Both slowness of growth and high altitude conduce to fine flavor.

On Indian plantations the bushes are plucked from twelve to twenty times during the season. After plucking, the bushes very soon send forth new shoots.

The distinguishing features of India teas (due probably to both climate and methods of manufacture) are heavy body, pungency, and depth of color, rather than delicate flavor and aroma. The dry leaf is black or grayish black, usually with yellow tips. The flavor is described as malty or nutty. Some of the Darjeeling teas have a raisin flavor which is highly prized.

The teas from the various districts have individual characteristics known to tea experts, but the retail buyer buys India tea as orange pekoe, sometimes by district as Assam or Darjeeling. Darjeeling is considered one of India's best teas, as it combines fine flavor with its body and pungency. India and Ceylon tea are often blended and sold as orange pekoe.

Another characteristic of North India teas is their tendency to "cream down" or turn thick on standing. This does not mean that the tea is poor quality, but on the contrary shows that it has good body and pungency. Some authorities think that the amount of tannin bodies influence this tendency to turn milky. Such teas are troublesome for iced tea, unless the tea is served immediately.

Ceylon tea is cultivated in the hills and on the plains, the former having the finest flavor. Tea is plucked all the year round, as there is no resting period on account of winter or drought. Twenty to thirty pluckings are made, but the leaf plucked in August and February has the finest flavor.

Ceylon tea resembles India tea, especially the lighter bodied teas from the southern districts. It has a flowery fragrance, which is delightful but not lasting. The dry leaf is brownish and wiry, the more expensive grades being tippy. As much of the Ceylon tea is not of high grade it finds its way as a "filler" in inexpensive blends. Green tea is also manufactured in Ceylon, but large amounts do not come to this market.

On Java plantations, as in India and Ceylon, machinery is employed in the manufacture of tea. The teas are much like Ceylon in character, but not so high grade. The largest shipments go to Australia and the home country, Holland. During the war Java tea became an important factor in our market. Sumatra is now growing tea similar in quality to Java, and exports some to the United States.

(*To be continued*)

EDITORIAL

The Mid-Winter Meeting of the American Home Economics Association. The members of the American Home Economics Association fortunate enough to attend the meeting held February 28 and March 1, in Atlantic City, will remember it as one of the significant gatherings in the history of the Association. The attendance was larger than usual at the mid-winter meetings, running well over 300 at some sessions and including interested visitors from other organizations. The program committee is to be congratulated on the success with which the main topic of each session was developed by the individual speakers, and on the general sense of unity and vigor which pervaded all the meetings.

The opening speech of the president, Mary Sweeny, struck the keynote in emphasizing the changed trend of home economics since 1917. Then it seemed in a measure "the step-child of agriculture and the second wife of industrial training," but now it is coming to be generally recognized as the science and art of rational living.

The papers presented showed that home economics still bases its teaching firmly on the facts of chemistry and physiology, economics and sociology, but they showed further that it is not merely using the facts to teach school children how to cook and sew, but is bringing them directly to the woman in the home and the girl at work in such a way that everyday living in the home is in better accord with health, beauty, and enjoyment. Moreover, home economics is helping bring down the cost of living by showing people how to get the best returns for the money they spend on the merchandise used in daily life. It is aiding in the health movement by providing school lunches and clinics for undernourished children, by teaching personal and household hygiene, and by tying up its work with that of the physical training agencies. In doing this it is going to psychology for help in methods of approach to children and adults, and to applied art in adapting materials and designs to clothing and house furnishings. It is getting into touch with manufacturers and retailers in the hope of improving standards of taste. In short, as was brought out by the discussion at these meetings,

home economics is showing itself what its friends have always felt it to be, the science of human welfare.

The Calcium Salts of Heated Milk. To what extent is the calcium precipitated out of pasteurized and evaporated milk or milk boiled for babies, and is this calcium lost in the bottom of the container?

Daniels and Loughlin[1] found that when they brought milk very slowly to the boiling point in a double boiler and boiled it for 10 or 45 minutes, enough of the calcium was precipitated out as an insoluble salt to cause young rats to fail to gain when fed on this milk. Milk pasteurized by heating it slowly (taking 30 to 45 minutes for the process) to a temperature of 65° or 82° C., and then holding the temperature there for 40 minutes would not support growth in the rats. Likewise commercially evaporated, unsweetened milk diluted with distilled water failed. Good growth was obtained with raw milk, with milk brought quickly to the boiling point in an open saucepan and boiled for 1 minute, and with undiluted sweetened condensed milk.

They could correct the calcium deficiency in the slowly boiled, pasteurized and evaporated milks, by adding to the rats' diet some tri-calcium phosphate or the washings from the pasteurizing containers or from the can in which the evaporated milk came, and obtain normal growth. The salt or washings had to be held in a suspension of starch paste to prevent their settling out and not being drunk. The salts were apparently not precipitated out when the milk was heated quickly and boiled for 1 minute; even though they were precipitated out of solution in the condensed milk, the thick, pasty consistency of this milk prevented their settling out to the bottom.

That the failure to grow on such diets was not due to a destruction of either the fat soluble A or the water soluble B vitamines was demonstrated by a lack of improvement when these two vitamines were added to the diet in some other form. Rats are not susceptible to scurvy so it could not have been due to a destruction of that vitamine.

How much application these findings have to the diet of the American adult, which is already low in calcium, it will be interesting to learn. The authors report that an investigation of the relation of these results to infant nutrition is now under way.

[1] Daniels, A. L., and Loughlin, R., A deficiency in heat treated milks, *Jour. Biol. Chem.*, **44**, 381 (Nov. 1920).

THE OPEN FORUM

What is the Proper Height for the Kitchen Table?—All recent discussions of the planning and equipment of kitchens have at least touched on the subject of proper height of working surfaces. They all agree that this has direct bearing on the ease with which work can be done and the comfort or fatigue of the worker, but there is wide variation in the suggested heights for table, sink, and other equipment, some estimates placing the working surfaces 8½ inches higher than is advocated by certain other authorities. Some writers also suggest placing table, bottom of sink, and ironing board at the same height from the floor, while others hold that the various pieces of equipment should be at different heights according to the work done on them.

As already noted in the JOURNAL (November, 1920, p. 506) experiments with the respiration calorimeter in the Office of Home Economics of the United States Department of Agriculture show that more energy is used when the working surface on which household tasks are done is not of comfortable height. If it were possible to measure the rates of fatigue under various conditions the results probably would be even more striking.

The workers in the Experimental Kitchen at the Department of Agriculture have paid some attention to height of working surfaces in connection with the different operations involved in their work; and their experience is that the various kinds of kitchen tasks can often be done most comfortably and effectively at different heights. Differences in length of arm and height of shoulder, as well as total height of body and individual methods of working, however, cause so much variation that accurate data are needed on which to base standard recommendations.

Classes in household management would undoubtedly find this an interesting problem and might collect data from which could be drawn a scale of heights for the main pieces of kitchen equipment. In order to make the data comparable, the following tasks are suggested for testing the proper height of surfaces: Use of the rolling pin, as in rolling pastry or cookies; use of a dover egg beater, or beater of similar type; washing dishes in the sink. Each task should be continued until the worker becomes fatigued, with adjustment of working surface to at least two different heights. Besides finding the most comfortable heights at which women of varying statures can perform these tasks, careful measurements should be made, not only of stature, but also of height from tip of

shoulder to floor, and length from tip of shoulder to tip of fingers when the arm is extended close to the side; possibly also, length of forearm, that is, distance from point of elbow to bend of wrist or to tip of middle finger.

THE OFFICE OF HOME ECONOMICS.

Two practical points are often overlooked in discussing the height of kitchen equipment. One is that in many families more than one person is at work in the same kitchen. Even when there is no outside help, mother and daughter often share the duties. Should there be an adjustable table, if persons of quite different heights must work at it for any length of time?

The second one is the question whether the equipment should be adjusted for working in a standing position. Should not the housekeeper be encouraged to do more of her work sitting down? At first this seems impossible to many women, but those of us who have accustomed ourselves to it know that it can be done and at a large saving of energy. Much of our cooking, such as preparation of vegetables, mixing of doughs and batters, or preparing meat for the oven; ironing, especially when an electric iron is used; even dishwashing—can be done as well when one is seated as when one stands. The adjustment then will come not so much in table and sink as in chair and stool, and it is comparatively easy to have stools of different heights for the use of different people, or for different kinds of work. Cannot some of our home economics students work on the problem with these points in mind?

ALICE P. NORTON.

BOOKS AND LITERATURE

The Story of Milk. By JOHAN D. FREDERIKSEN. New York: The Macmillan Company, 1919, pp. 186. $1.50.

The book first presents historical facts about milk and its products and milk production as related to the various breeds of cows, and discusses methods of increasing production.

The material on composition of milk, methods of testing for quality, pasteurization and care of milk on the farm, in transit, in the dairy, and in the home is particularly interesting.

The use of pure cultures or starters in the manufacture of hard and soft cheese, buttermilk, and butter is described, as well as the manufacture and use of milk products, such as milk sugar, casein, milk powder, condensed milk.

Bovine tuberculosis is discussed, first under the head of "Healthy Cows" (pp. 12–13), second, "Bovine Tuberculosis" (pp. 35–36). It is suggested in regard to the author's statement (p. 12) "Healthy cows alone can be depended upon to produce sanitary milk; in many herds of milk cows tuberculosis is prevalent and constant vigilance is necessary to prevent its spread," that the closing sentence regarding the tuberculin test by Koch would have been a good place to end the paragraph. This question of tuberculosis is a serious one and the Bureau of Animal Industry, of the Department of Agriculture, states that many cows, because of previous exposure to tuberculosis, have this disease. Those animals which have been most closely confined under poor sanitary conditions, and which have been fed for the one purpose of milk production, without regard to the building up of the body, are most commonly infected. Unless this disease is so far advanced as to affect the general health of the cow, or has spread to the milk organs, the udder or the teats, the milk before being drawn is probably not infected. However, when several animals are more or less infected, disease germs may gain entrance to the milk in the vessel from infected premises. It is the opinion of practically all authorities, who have made investigations along this line, that bovine tuberculosis may be transmitted to human beings, especially children, by the use of raw cow's milk infected with the tubercle bacillus. Whenever it is possible, the herd should be tested with tuberculin and all animals that give a reaction indicating the presence of tuberculosis, should be removed. If diseased animals are not killed, they should be kept in strict quarantine, and the milk, if used for any purpose, should be pasteurized. The Bang method of isolation has not proved satisfactory in the United States except in a very few instances and has therefore already been largely discarded.

City delivery is discussed, as well as the cost of production, transportation, and sanitary handling in milk plants. It would seem advisable to give more space to this important problem, which is so little understood by the general public.

About 40 pages are devoted to recipes, among which are ices and ice cream recipes prepared by Professor Mortensen, Dairy Department, Iowa State College. These are very excellent. The recipe on spinach soup speaks of cooking the spinach for 30 minutes in 3 cups of water, after which the water is drained. We are aware of the fact that this method of preparing spinach is in common use, but we believe it would be better to cook the spinach in a very small quantity of water, without soda, and only long enough

to make it tender, thus producing a bright green product of mild flavor. Steaming would be even a better method of preparation since there would be practically no loss of soluble matter.

The chapter on the food value of milk is very short and somewhat incomplete.

The student of home economics who is unfamiliar with the production and manufacturing aspects of dairy products will find much of value in this book.

JESSIE M. HOOVER.

Students' Manual of Fashion Drawing. By EDITH YOUNG, Director of the Edith Young Art School, Newark, New Jersey. Thirty lessons with conventional charts. New York: John Wiley & Sons Inc., pp. 107. $2.00.

The book consists of a series of thirty illustrated lessons which begin by showing how to draw the simplest dress form; how to draw skirts, waists, tucks, ruffles, collars, sleeves, and trimmings; then follows a group of elementary lessons on such topics as features, arms, legs, heads, and the various views of the figure; more dress details and suggestions for rendering textures; perspective and some suggestions and notes on the various methods for reproducing drawings.

In the introduction the author has made it clear that the illustrations were not intended to have any art quality but that they are "conventional charts" or diagrams of all the details in figure construction and dress design which puzzle the young student. The book must thus be judged in the light of this statement and, for its successful use, nearly all the plates must be supplemented in the classroom by illustrations which will set standards of beauty in line drawings.

The book is well arranged and well indexed so that the desired material is very easily found. The text has been adapted to the person who has had no previous experience in the technique of drawing. It does not attempt to teach principles of design, but shows simple and direct methods of representation, and is intended to be used as a guide for the "would-be fashion artist." It is a useful reference book for high school and college students in the costume design classes.

HARRIET GOLDSTEIN,
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INSTITUTIONAL MANAGEMENT

COMPILED BY EDA LORD MURPHY AND LOIS HILL

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House Drainage and Sanitary Plumbing. W. P. Gerhard. D. Van Nostrand Co., N. Y.

Municipal Housecleaning. William Parr Capes. E. P. Dutton & Co., N. Y.

The Economic Disposal of a Town's Refuse. W. Francis Goodrich. J. Wiley and Sons, N. Y.

The Disposal of Municipal Refuse. Harry de Berkeley Parsons. J. Wiley & Sons, N. Y.

Modern Destruction Practice. W. F. Goodrich. Griffin & Co., London.

Cyclopedia of Heating, Plumbing, and Sanitation. American School of Correspondence, Chicago.

Sanitary Code for City of Chicago (1911). Dept. of Health, Chicago.

Sanitation of Public Buildings. W. P. Gerhard. J. Wiley & Sons, N. Y.

Guide to Sanitary Inspections. W. P. Gerhard. J. Wiley & Sons, N. Y.

Foods and Sanitation. E. H. Forster and Mildred Weigley. Row, Peterson & Co., Chicago and N. Y.

Buying and Management

The Practical Hotel Steward. John Tellman. The Hotel Monthly, 443 S. Dearborn St., Chicago. Ideas on equipment, ordering, and table service for hotel.

The Hotel Waitress. John Hearshey. H. J. Bohn and Brother, Chicago. Duties, obligations, rights, and privileges of hotel waitress.

The Lunch Room. Paul Richards. The Hotel Monthly, 443 S. Dearborn St., Chicago. Plans, equipment, management, accounting, food and quick sales, bills of fare, receipts.

Guide to Hotel Housekeeping. Mary E. Palmer. The Hotel World, Chicago.

Successful Restaurant Publicity. Milo E. Westbrooke. Poughkeepsie, N. Y.

The Human Element in Organization. Frederic Meron. T. Andel & Co., N. Y. (May get ideas from factory management.)

Reducing Selling Costs. P. E. Derrick. Newnes, London.

The Economic Notebook. National Board of Y. W. C. A., N. Y.

The School Lunch: Its Organization and Management. Emma Smedley, 6 E. Front St., Media, Pa.

Employment Management. Daniel Bloomfield. H. W. Wilson, N. Y. A compilation of selected articles by leading authorities on employment management.

Common Sense and Labor. Samuel Crowther. Doubleday Page & Co., Garden City, N. Y. Discussion of labor problems such as labor unrest, industrial democracy, wages, and profit sharing plans.

Personnel Administration. Tead and Metcalf. McGraw-Hill Book Co., N. Y. Principles and best prevailing practice in the field of administration of human relations in industry.

When the Workmen Help You Manage. William Basset. The Century Co., N. Y. A consideration of the employer-employee situation today.

PAMPHLETS

Instruction in Institution Administration. Teachers College Bulletin, Columbia University.

Handbook of the Association Cafeteria. National Board Y. W. C. A., N. Y.

Restaurant Facilities for Shipyard Workers. Frederick S. Crum. The Industrial Relations Division, U. S. Shipping Board Emergency Fleet Corporation, Philadelphia.

Welfare Work for Employees in Industrial Establishments in the United States. Government Printing Office, Washington.

Cafeteria Standards and Methods of Obtaining These. Nola Treat. University of Minnesota.

PERIODICALS

American Food Journal, The Patterson Publishing Co., 25 East 26th St., N. Y. $3.00.

The Caterer, 1495 Broadway, N. Y.

Chicago Packer (weekly newspaper), 536 Walnut St., Kansas City, Mo. $2.00.

Dry Goods Economist, 239 W. 39th St., New York City. Weekly $6.00, monthly $1.75.

Dry Goods Merchants Trade Journal, Des Moines, Iowa. $3.00.

Grocer's Magazine, 88 Broad St., Boston, Mass. $1.50.

Hotel Bulletin, Ben P. Branham Printing Co., 175 W. Jackson Blvd., Chicago. $3.00.

Hotel Gazette, John Martin, 1400 Broadway, New York City. $2.00.

Hotel Monthly, John Willy, 443 S. Dearborn St., Chicago. $2.00.

Hotel World, 440 S. Dearborn St., Chicago, Ill. $4.00.

Journal of American Medical Association, 535 North Dearborn St., Chicago. $5.00.

Journal of Home Economics, 1211 Cathedral St., Baltimore, Md. $2.50.

The Modern Hospital, 24 E. Ontario St., Chicago. $3.00.

The Steward, 107–9 West 38th St., N. Y.

Tea and Coffee Trade Journal, 79 Wall St., New York City. $3.00.

NEWS FROM THE FIELD

University of Wisconsin Summer Courses. The great need for trained women to go into the extension field in home economics is shown by the fact that there are now over fifty-two positions to be filled in the northern and western districts; and the need will be greater in July. Experienced teachers who have first-hand knowledge of rural conditions may take a six weeks summer course at the University of Wisconsin where special courses are given in subject matter, methods of presentation, and training in community needs and community leadership.

The Department of Sociology is offering special county field work which may be taken at the same time as part of the general training, or courses in poultry and horticulture may be elected as part of the training.

Dr. Dorothy Reed Mendenhall is giving two courses on the family: first, the mother and child, and, second, the care and feeding of the older child. These are especially designed for the experienced teacher and for the prospective home demonstration agent and nutrition specialist who wish to learn the latest data and methods of presentation in feeding clinic work.

Public health nurses will find these two courses very helpful in their county work. Dr. Mendenhall needs no introduction to the home economics specialist or the child welfare nurse because of her wide experience in extension work, her connection with the work of the Children's Bureau, and her writings on the subject of child hygiene and child feeding.

Course in Homemaking Adjustments in Social Work. The Committee on Home Economics of the New York Charity Organization Society offers, for the third year, its course in Homemaking Adjustments in Social Work, beginning Monday, June 6, and ending Friday, July 1, 1921. This course is open to a limited group of women with home economics training, who wish to observe methods used in various types of social work and receive practical experience in social case work.

For further information address Miss Emma A. Winslow, Director of June Course, Charity Organization Society, 105 East 22nd Street, New York City.

University of Chicago Fellowships. The two fellowships in the home economics department, which have been offered by the University of Chicago for the past two years, are again available for 1921–1922. Each one carries $300 and tuition. They are awarded to the candidates who have had the best training and experience and who show the greatest promise of ability to do advanced work, including research in any line of home economics. The courses taken at the University by the successful candidates will be directed toward the Master's and Doctor's degrees. Applications with letters of recommendation should be received by the Chairman of the Department of Home Economics before June 15.

Fellowships in Social-Economic Research. Three fellowships carrying a stipend of $500 each are offered by the Women's Educational and Industrial Union to women who wish thorough preparation for work in social-economic research.

Application must be filed before May first. For further information and application blanks, address Department of Research, Women's Educational and Industrial Union, 264 Boylston Street, Boston 17, Mass.

New York Nutrition Council. The New York Nutrition Council has been formed recently for the purpose of providing a means of exchanging information concerning methods of conducting various types of nutritional activities. Mrs. Mary S. Rose of Teachers College has been elected chairman of the Council, and Emma A. Winslow of the Charity Organization Society has been made secretary. The organizing committee consisted of Mrs. Amy D. Storer of the Atlantic Division of the American Red Cross, Mary Arnold of the Babies' Welfare Association, Lucy H. Gillett of the A. I. C. P., and George R. Bedinger of the New York County Chapter of the American Red Cross.

Membership is limited to representatives of organizations which carry on nutritional activities as part of their program. Biweekly meetings are held with the responsibility for arrangement assumed by the representatives.

The fall meetings were held under the auspices of the Morningside Nutrition and Homemaking Center, the Bureau of Educational Experiments, the Atlantic Division of the American Red Cross, Teachers College, and the Pediatric Section of the New York Academy of Medicine coöperating with the Babies' Welfare Association.

Sally Lucas Jean of the Child Health Organization arranged a program on Health Education in the Elementary Schools for the January meeting. Nutrition Classes in Out-Patient Departments of Hospitals was the subject for the program on February seventh, arranged by Dr. Charles Hendee Smith of Bellevue Hospital. Grace Schermerhorn of the New York City Department of Education was chairman of a meeting to discuss school lunch problems, and Bailey B. Burritt, Director of the A. I. C. P., is planning for a meeting to discuss ways of meeting the racial nutritional problem. Programs for later meetings will be in charge of Dr. M. Alice Asserson of the New York Tuberculosis Association and George R. Bedinger of the New York County Chapter of the American Red Cross. The final meeting of the year is to be a "review meeting," when reports will be made by various committees appointed to summarize the conclusions reached in previous discussions.

The New England Home Economics Association opened the new year with a meeting on January 8. The hall was filled with attentive listeners, showing that the subject, The Problem of Feeding College Men and Women, awakens interest.

Delegates were present from nearly every New England college and many normal schools, representing both the scientific and the technical departments.

Mrs. Whiton, who buys all the food materials for Wellesley College, paid high honor to the cooks who by their loyalty and skill made satisfaction possible during these years of "high jumps" in prices. The distribution of the raw materials among eighteen different houses complicates her problem. Twice a week she interviews every house director, while between times the telephone is kept busy. For success, she stated certain general principles: Give orders early so that marketmen may have a fair chance to fill your order acceptably. Let the quality be the best; this does not always mean "fancy." When prices are prohibitive, change the cuts of meat or brands of goods but not the grade.

Miss Baker, of Columbia University, gave to the dietitian wonderful opportunities. In schools she should consider herself responsible for the health of the students and so for their success in study; in hospitals, her department must not only prove preventive and corrective of disease but a second aid in surgery.

The dietitian should stand on the same plane with the surgeon and the doctor, and the kitchen should be as well equipped as the medical and surgical departments. A dietitian should keep in close touch with chemists, health officers, social workers, and nurses.

Miss Baker's successful experience in feeding five thousand persons a day, from kindergarten age up through college faculty, made forcible many practical suggestions. A few

only can be given here. The commons are both popular and self-supporting. Make the first and last impression—soup and dessert—above reproach. Watch the plate returns for their educational value. With student helpers for short periods, twenty-five per cent in the cost of service can often be saved by the cafeteria plan, over a regular meal menu. The cafeteria is more popular because the patrons can choose the meal from sight and usually therefore waste less in both money and food. Children are served at the rate of eight to ten and grown ups from four to six per minute. Menus should be made out for 6 to 8 days, or in multiples of these, so that repetitions of the same foods on definite days may be avoided.

Miss Goodrich, of Simmons College, appealed for more research work in the analysis of foods in regard to costs; for more research in actual cost of the edible portion of the principal articles of food; and for the standardization of per capita costs so that all quotations shall include the same items and therefore make possible accurate comparisons. A few such analyses have been made in her department with results of definite value.

Discussions, led by Miss Churchill, President of the Women's Educational and Industrial Union, brought out the representative character of the audience as well as the scope of the subject. Miss Pierce, representing Princeton; M. Vickers, Executive Secretary of New Hampshire State College, and Professor Mitchell, of Brown University, were among the helpful contributors.

The following were a few of the many topics presented:

What should be the relation of the purchasing agent? Should the person responsible for the preparation do the purchasing of the food? Should such an agent supervise the menus? Most directors felt that they should also do the purchasing as a matter of efficiency.

Whether men or women make the best cooks brought out widely different experiences. The consensus of opinion seemed to be that a supervisor who could—and would—give training had good results from either.

Princeton uses all student help directed by students. Miss Pierce believes that attendance at college commons should be compulsory for the first two years, in order to make the commons financially successful.

What is done for students who are unable to eat the food served? Many give a glass of milk if desired, but allow no other change in the meal served. Some serve specially desired articles of food to any one table. This has resulted in "Queer Dinners" given one night a week.

Professor Mitchell came with definite questions relating to the problems of establishing and carrying on commons. He found that these were, in general, answered, and he left with the declared conviction that there should be "a trained woman in charge of college dining halls."

This meeting proved so helpful that at its close the request was made that more attention be given to the subject of Institutional Management in the program of the New England Home Economics Association.

Ceramic Research. The National Research Council and the American Ceramic Society have established a joint committee to promote the investigation of scientific problems along the lines of ceramic industry and particularly by founding a series of research fellowships whose holders shall devote their attention exclusively to this problem. According to statements given out by the Council, the "ceramic industries, including brick and tile making, and general crockery and glass manufacture as well as ornamental potteries, although among the earliest ones developed by man, have been the last of our great manufacturing industries to reach the state of an applied science. They have been based for centuries on rule-of-thumb methods, trade secrets, and individual artistry. As far as their artistic features go science can do little or nothing for them, but in all other ways it can be of great advantage to them."

Height-Weight Standards. A conference of seven organizations was recently called by Dr. L. Emmett Holt, Chairman of the Child Health Organization of America, to consider the possibility of adopting a uniform table of weight for height and age, acceptable to all. Among the organizations invited to the meeting were: American Child Hygiene Association, Child Health Organization, Federal Bureau of Education, Federal Children's Bureau, McCormick Memorial Fund, and Public Health Service.

It was found that there was substantial agreement between the various tables now in use, the difference being chiefly a matter of presentation or statement.

A committee was appointed to draft a table embodying the suggestions made, to be presented at a subsequent meeting before its final adoption and publication.

A Post Graduate Child Hygiene Course was opened last November at the State Normal School, Trenton, New Jersey, in coöperation with the Bureau of Child Hygiene, State Department of Health.

Training is given in the fundamentals of pediatrics and applied hygiene in social case work and in the many phases of public health work with which the child hygiene nurses come in contact.

The course is now in successful operation with an attendance of fifty-six nurses.

The home economics students at **Eastern Kentucky State Normal School** organized a Home Economics Club early last fall. The Club meets twice each month on Thursday evening for a program followed by a social hour. The Club is now working toward establishing a club-room which the home economics students may use for reading and resting, as well as for social gatherings and club meetings.

On December third, Home Economics Day, the Club gave a play—"Princess Pieta and Prince Caloric"—from which $11.90 was made above expenses. To this they added from the treasury enough to send a contribution of $14.00 to the Ellen H. Richards Memorial Fund.

A Home Economics Club of twenty members was organized in the Schenectady High School, last September, for the purpose of promoting interest in the study of home economics and social fellowship between members of the club.

Dorothy Grant, Clara Laubengayer, and Edith Sarver are honorary members. The officers elected for the first term were: president, Margaret McKeon; vice-president, Beatrice Steers; treasurer, Iverna Hill; and secretary, Erma Schmidt.

The United States Civil Service Commission announces open competitive examinations for scientific assistants on April 13 and 14, and for matrons in the Indian Service on April 13, May 25, and July 6. Applications for positions as dietitians will be received up to June 30, and will be rated without examination.

The next meeting of the **Western Arts Association** will be held in Peoria, Illinois May 3 to 6, inclusive. This association was formerly the Western Drawing and Manual Training Association, and all those interested in art, manual training, home economics, and vocational education are eligible to membership. The membership fee is $2.00. The present officers are: President, Ruth Raymond, Head of the Department of Art Education, University of Minnesota; Secretary-Treasurer, Mr. L. R. Abbott, Director, Department of Manual Training and Industrial Education, Grand Rapids, Michigan. For further information, address the Secretary, 234 N. Division Ave., Grand Rapids, Michigan.

The Fourteenth Annual Meeting of the American Home Economics Association will be held at the New Ocean House, Swampscott, Mass., June 27 to 30. Further announcement will appear in the May Journal.